

**REMARKS**

In response to the Office Action mailed January 30, 2007 (hereinafter "Office Action"), claims 9, 13, 16-19 have been cancelled without prejudice or disclaimer, and claims 1-2, 5-7 and 14 have been amended. Therefore, claims 1-8, 10-12, 14-15 and 20-33 are pending. Support for the instant amendments is provided throughout the as-filed specification. Thus, no new matter has been added. In view of the foregoing amendments and following comments, allowance of all the claims pending in the application is respectfully requested.

**INFORMATION DISCLOSURE STATEMENT**

Applicant thanks the Examiner for considering the references cited in the Information Disclosure Statements filed on April 16, 2004 and March 9, 2006, as evidenced by the signed and initialed copy of the PTO-1449 Form returned with the Office Action.

**SPECIFICATION**

The Specification and Drawings are objected to as allegedly failing to comply with 37 C.F.R. §1.84(p)(5). Specifically, the Office Action alleges that the reference character "RF" is not mentioned in the description. [Office Action, pg. 2, ¶4]. Applicant respectfully traverses this objection because paragraph [0109] of the specification clearly describes the reference frame RF in relation to the substrate table WT. However, merely in order to expedite prosecution, paragraph [0109] has been amended to explicitly recite the reference frame RF as illustrated in Figure 1. Accordingly, withdrawal of the objections to the Specification and Drawings are earnestly sought.

**Non-Statutory Double Patenting Rejection**

Claims 1-12 and 14-15 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-3, 5-6, 11-16 and 18-19 of U.S. Patent No. 6,819,425 [Office Action, pg. 3, ¶6]. Claims 23-24 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 5 and 25 of U.S. Patent No. 6,819,425 in view of "Precision wafer stepper utilizing a two-dimensional optical encoder" by Dey ("Dey") [Office Action, pg. 4, ¶7].

Although Applicant respectfully disagrees with the rejections set forth by in the Office Action, a terminal disclaimer is being filed herewith solely in an effort to expedite

prosecution. Applicant further notes that the filing of a terminal disclaimer to obviate a rejection based on non-statutory double patenting is not an admission of the propriety of the rejection. *Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870, 20 USPQ2d (BNA) 1392 (Fed. Cir. 1991). The court indicated that the “filing of a terminal disclaimer simply serves the statutory function of removing the rejection of double patenting, and raises neither a presumption nor estoppel on the merits of the rejection.” Accordingly, withdrawal of this rejection is earnestly sought.

#### **REJECTIONS UNDER 35 U.S.C. §101**

Claims 14 and 20 stand rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter. [Office Action, pg. 5, ¶9]. In particular, the Office Action alleges that the aforementioned claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP §2106) which states that the claims must have either a physical transformation and/or a useful, concrete and tangible result. Applicant respectfully traverses this rejection. Merely in order to expedite prosecution and without acceding to the merits or substance of the rejection, claim 14 has been amended to recite, *inter alia*, supplying or making available the measured displacements for further analysis or processing. Applicant submits that claim 14 is directed to statutory subject matter, for example, a method having practical application producing a concrete, useful and tangible result (e.g., including supplying or making available the measured property for further analysis or processing). As disclosed in paragraph [0030] of the specification, for example, the concrete, useful, and tangible result provided by the claimed invention can be used to provide an improved displacement measuring system for use in a lithographic projection apparatus. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 14 and 20 under 35 U.S.C. §101.

#### **REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

Claims 6 and 9 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particular point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Office Action alleges that the claimed feature “wherein the or each grid grating” of claims 6 and 9 is indefinite because it is unclear what other component may be positioned so as to be substantially coplanar or may include a reference mark. [Office Action, pg. 6, ¶11]. In response, claim 6 has been

amended to clarify what is being claimed and claim 9 has been canceled. Accordingly, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. §112.

**REJECTIONS UNDER 35 U.S.C. §103**

Claims 1, 3, 8, 10-12, 14-15 and 20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,341,007 to Nishi et al. ("Nishi") in view of Dey. [Office Action, pg. 6, ¶13]. Claim 7 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Nishi in view of Dey in further view of U.S. Patent No. 4,769,680 to Resor, III et al. ("Resor"). [Office Action, pg. 9, ¶14].

With regard to claim 1, the Office Action concedes that the prior art of record, including Nishi, Dey and Resor, whether taken alone or in combination do not disclose, teach or suggest a lithographic projection apparatus comprising, *inter alia*, a support structure configured to support a patterning device, the patterning device serving to pattern a beam of radiation according to a desired pattern; a substrate table configured to hold a substrate; a projection system configured to project the patterned beam onto a target portion of the substrate; and a displacement measuring system configured to measure the position of a moveable object in at least two degrees of freedom, the moveable object comprising said support structure or said substrate table, said displacement measuring system comprising at least one grid grating mounted on said moveable object and at least one sensor head configured to measure displacements of said grid grating in two degrees of freedom, wherein the at least one grid grating includes a reference mark detectable by the respective sensor head for defining a reference position of said moveable object as recited in claim 1.

Claims 2-3, 5-8 and 10-12 depend from claim 1 and are allowable by virtue of their dependency from claim 1 and for the additional features recited therein.

Claim 14 has been amended to recite similar features as claim 1, and is thus allowable from similar reasons, as discussed above. Claims 15 and 20 depend from claim 14 and are allowable by virtue of their dependency from claim 14 and for the additional features recited therein.

Thus, Applicant respectfully requests that the rejection of claims 1, 3, 7-8, 10-12, 14-15 and 20 under 35 U.S.C. §103(a) be withdrawn and the claims be allowed.

**ALLOWABLE SUBJECT MATTER**

Applicant thanks the Examiner for the indication of allowable subject matter. The Office Action indicated that claims 21-22 and 25-33 would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening claims. Moreover, the Office Action has indicated that claims 2 and 5 would be allowable if the double patenting rejection is overcome and if rewritten in independent form including all of the limitations of the base claim and any intervening claims. [Office Action, pg. 9, ¶15]. Further, the Office Action has indicated that claims 4 and 23-24 would be allowable if the double patenting rejection is overcome. Finally, the Office Action has indicated that claims 6 and 9 would be allowable if the double patenting rejection and the rejection under 35 U.S.C. §112, second paragraph is overcome and if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

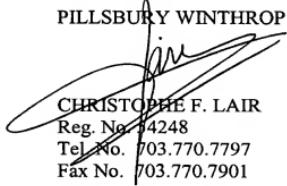
**CONCLUSION**

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

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